RAW SEQUENCE LISTING   DATE: 06/03/2003
PATENT APPLICATION: US/09/674,195C   TIME: 13:20:06

Input Set : A:\150190_1.doc
Output Set: N:\CRF4\06032003\I674195C.raw

```
 4 <110> APPLICANT: Rosely M. Zancope-Oliveira
 5        Timothy J. Lott
 6        Leonard W. Mayer
 7        Errol Reiss
 8        George S. Deepe
11 <120> TITLE OF INVENTION: NUCLEIC ACIDS OF THE M ANTIGEN GENE OF
12        HISTOPLASMA CAPSULATUM, ANTIGENS, VACCINES AND ANTIBODIES,
13        METHODS AND KITS FOR DETECTING HISTOPLASMOSIS
16 <130> FILE REFERENCE: 14114.0325U2
18 <140> CURRENT APPLICATION NUMBER: 09/674,195C
19 <141> CURRENT FILING DATE: 2000-10-26
21 <150> PRIOR APPLICATION NUMBER: PCT/US99/09151
22 <151> PRIOR FILING DATE: 1999-04-27
24 <150> PRIOR APPLICATION NUMBER: 60/083,676
25 <151> PRIOR FILING DATE: 1998-04-30
27 <160> NUMBER OF SEQ ID NOS: 20
29 <170> SOFTWARE: FastSEQ for Windows Version 4.0
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33 <212> TYPE: DNA
34 <213> ORGANISM: Histoplasma capsulatum
36 <220> FEATURE:
37 <221> NAME/KEY: misc_feature
38 <222> LOCATION: 3258
39 <223> OTHER INFORMATION: n = g, a, c or t(u)
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44 ttttattttc attcatcttc tctgtggcaa acatgcaggt atgcgagctc tggaccctgg      180
45 ggtgtggccc ttgatgcata tggtttattt atagccgccc ggaagccctg gcctgttaaa      240
46 ttttggacct cctcccgcca ttctttccaa acttcgtgcg tccgtttccc atttcccccc      300
47 tccccatttg ggttccctat aggccactgc gtgctccact caagaagggt cccagtcaat      360
48 ttggtcccta ccctctccaa cactatctgc atatgtaata tatatcgata tctaactgcc      420
49 attgattatt tgtcttcttc agcatctttt tgtctcgagc aagcttactc cacgttcaat      480
50 tcaggggata aaaatgcggt cgctcaagct tatactcgcc tcggcgggtg ttgtttctgc      540
51 agcctgtccc tacatgtcag gggagatgcc tagcggtcag aaaggccccc tcgatcgccg      600
52 ccatgacact ctctccgacc ctacggacca gtttcttagc aagttttaca ttgacgatga      660
53 acagtcggtg ctaacaacgg acgtgggtgg tcccatcgag gaccaacaca gcctgaaggc      720
54 tggaaataga ggcccaactc tacttgagga ttttatcttc cgccagaaga ttcaacactt      780
55 tgatcatgag agggtatgta gatacaaaat atgtgaccgt gttgcaaatc cgctaattca      840
56 attttacgca ggttcctgag cgcgccgtcc atgctcgagg agctggtgcc catggcgtat      900
57 tcacatccta taataactgg tcgaatatca cagccgcatc cttcttgaac gcggcaggaa      960
58 agcagacacc agtattcgtg cggttttcta cagtcgctgg tagcagaggc agtgttgact    1020
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 60 agcattatat cgtggtagtc atactcataa cagcacaaca aatatgaata caaacccagg   1140
 61 acctaggctg actactcggc aatgtagata tcgtcggaaa caacgttcca gtcttcttca   1200
 62 ttcaggacgc tattcaattc cctgatttga ttcacgctgt caagccgcaa ccagacagtg   1260
 63 aaattcccca ggctgcaact gcacatgata cggcatggga tttcctcagc cagcagccca   1320
 64 gctcattgca tgccctcttc tgggcaatgt caggacatgg aatccctcgc tcaatgcgtc   1380
 65 atgttgatgg gtggggcgtc cataccttcc gacttgtcac cgacgagggc aactcgacct   1440
 66 tggtcaagtt tcgctggaag accctccaag gaagagcggg cctggtatgg gaagaggcac   1500
 67 aggctcttgg cggaaagaat cccgacttcc atcgacaaga cctctgggat gccattgaat   1560
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 70 ctttatatac gttttactca tatagctggg ctttcaattg gtgaatgaag cagatcaatc   1740
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 72 caccccaatc ggaaaaatgg tcttgaaccg aaacccaaaa agttattttg ccgaaactga   1860
 73 gcagatcatg gttggtccac cccctatata tttggaatat gaatacatgt atagctagat   1920
 74 gaagcgtata tctaaatata tttccacagt tccaaccagg tcatgtagtt cgcggaatcg   1980
 75 atttcacgga tgaccctttg cttcagggcc gcttgtactc ctaccttgac actcaattga   2040
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 85 ctaccacaac aaggcaaccg tccccatcgg caccttcggc acgaatctcc tgcggctcga   2640
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 87 ccgggccgcg tttaacagcg ccaacaacaa agtagatatc gtcctagtgg gctcatcgct   2760
 88 tgatccccaa cgcggcgtga acatgaccta ttccggcgcc gacggctcga tcttcgatgc   2820
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 99 gagacaaata atgatagatt aacaaataat tgcacaccca ataggccttc cctcacgata   3480
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104 atagataaaa cctgaacgat ttagcccctg ttgggggaaa taggggttag ggggcgagc   3780
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106 acaacacctt caaaaaggat cc                                            3862
111 <210> SEQ ID NO: 2
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112 <211> LENGTH: 707
113 <212> TYPE: PRT
114 <213> ORGANISM: Histoplasma capsulatum
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119 Ser Asp Pro Thr Asp Gln Phe Leu Ser Lys Phe Tyr Ile Asp Asp Glu
120              20                  25                  30
121 Gln Ser Val Leu Thr Thr Asp Val Gly Gly Pro Ile Glu Asp Gln His
122          35                  40                  45
123 Ser Leu Lys Ala Gly Asn Arg Gly Pro Thr Leu Leu Glu Asp Phe Ile
124      50                  55                  60
125 Phe Arg Gln Lys Ile Gln His Phe Asp His Glu Arg Val Pro Glu Arg
126 65                  70                  75                  80
127 Ala Val His Ala Arg Gly Ala Gly Ala His Gly Val Phe Thr Ser Tyr
128              85                  90                  95
129 Asn Asn Trp Ser Asn Ile Thr Ala Ala Ser Phe Leu Asn Ala Ala Gly
130              100                 105                 110
131 Lys Gln Thr Pro Val Phe Val Arg Phe Ser Thr Val Ala Gly Ser Arg
132          115                 120                 125
133 Gly Ser Val Asp Ser Ala Arg Asp Ile His Gly Phe Ala Thr Arg Leu
134      130                 135                 140
135 Tyr Thr Asp Glu Gly Asn Phe Asp Ile Val Gly Asn Asn Val Pro Val
136 145                 150                 155                 160
137 Phe Phe Ile Gln Asp Ala Ile Gln Phe Pro Asp Leu Ile His Ala Val
138              165                 170                 175
139 Lys Pro Gln Pro Asp Ser Glu Ile Pro Gln Ala Ala Thr Ala His Asp
140              180                 185                 190
141 Thr Ala Trp Asp Phe Leu Ser Gln Gln Pro Ser Ser Leu His Ala Leu
142          195                 200                 205
143 Phe Trp Ala Met Ser Gly His Gly Ile Pro Arg Ser Met Arg His Val
144      210                 215                 220
145 Asp Gly Trp Gly Val His Thr Phe Arg Leu Val Thr Asp Glu Gly Asn
146 225                 230                 235                 240
147 Ser Thr Leu Val Lys Phe Arg Trp Lys Thr Leu Gln Gly Arg Ala Gly
148              245                 250                 255
149 Leu Val Trp Glu Glu Ala Gln Ala Leu Gly Gly Lys Asn Pro Asp Phe
150              260                 265                 270
151 His Arg Gln Asp Leu Trp Asp Ala Ile Glu Ser Gly Arg Tyr Pro Glu
152          275                 280                 285
153 Trp Glu Leu Gly Phe Gln Leu Val Asn Glu Ala Asp Gln Ser Lys Phe
154      290                 295                 300
155 Asp Phe Asp Leu Leu Asp Pro Thr Lys Ile Ile Pro Glu Glu Leu Val
156 305                 310                 315                 320
157 Pro Phe Thr Pro Ile Gly Lys Met Val Leu Asn Arg Asn Pro Lys Ser
158              325                 330                 335
159 Tyr Phe Ala Glu Thr Glu Gln Ile Met Phe Gln Pro Gly His Val Val
160          340                 345                 350
161 Arg Gly Ile Asp Phe Thr Asp Asp Pro Leu Leu Gln Gly Arg Leu Tyr
```

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162         355                    360                    365
163 Ser Tyr Leu Asp Thr Gln Leu Asn Arg His Gly Gly Pro Asn Phe Glu
164         370                    375                    380
165 Gln Leu Pro Ile Asn Arg Pro Arg Ile Pro Phe His Asn Asn Asn Arg
166 385                    390                    395                    400
167 Asp Gly Ala Gly Gln Met Phe Ile Pro Leu Asn Thr Ala Ala Tyr Thr
168                    405                    410                    415
169 Pro Asn Ser Met Ser Asn Gly Phe Pro Gln Gln Ala Asn Arg Thr His
170                    420                    425                    430
171 Asn Arg Gly Phe Phe Thr Ala Pro Gly Arg Met Val Asn Gly Pro Leu
172         435                    440                    445
173 Val Arg Glu Leu Ser Pro Ser Phe Asn Asp Val Trp Ser Gln Pro Arg
174         450                    455                    460
175 Leu Phe Tyr Asn Ser Leu Thr Val Phe Glu Lys Gln Phe Leu Val Asn
176 465                    470                    475                    480
177 Ala Met Arg Phe Glu Asn Ser His Val Arg Ser Glu Thr Val Arg Lys
178                    485                    490                    495
179 Asn Val Ile Ile Gln Leu Asn Arg Val Asp Asn Asp Leu Ala Arg Arg
180                    500                    505                    510
181 Val Ala Leu Ala Ile Gly Val Glu Pro Pro Ser Pro Asp Pro Thr Phe
182         515                    520                    525
183 Tyr His Asn Lys Ala Thr Val Pro Ile Gly Thr Phe Gly Thr Asn Leu
184         530                    535                    540
185 Leu Arg Leu Asp Gly Leu Lys Ile Ala Leu Leu Thr Arg Asp Asp Gly
186 545                    550                    555                    560
187 Ser Phe Thr Ile Ala Glu Gln Leu Arg Ala Ala Phe Asn Ser Ala Asn
188                    565                    570                    575
189 Asn Lys Val Asp Ile Val Leu Val Gly Ser Ser Leu Asp Pro Gln Arg
190                    580                    585                    590
191 Gly Val Asn Met Thr Tyr Ser Gly Ala Asp Gly Ser Ile Phe Asp Ala
192         595                    600                    605
193 Val Ile Val Val Gly Gly Leu Leu Thr Ser Ala Ser Thr Gln Tyr Pro
194 610                    615                    620
195 Arg Gly Arg Pro Leu Arg Ile Ile Thr Asp Ala Tyr Ala Tyr Gly Lys
196 625                    630                    635                    640
197 Pro Val Gly Ala Val Gly Asp Gly Ser Asn Glu Ala Leu Arg Asp Val
198                    645                    650                    655
199 Leu Met Ala Ala Gly Gly Asp Ala Ser Asn Gly Leu Asp Gln Pro Gly
200                    660                    665                    670
201 Val Tyr Ile Ser Asn Asp Val Ser Glu Ala Tyr Val Arg Ser Val Leu
202         675                    680                    685
203 Asp Gly Leu Thr Ala Tyr Arg Phe Leu Asn Arg Phe Pro Leu Asp Arg
204         690                    695                    700
205 Ser Leu Val
206 705
209 <210> SEQ ID NO: 3
210 <211> LENGTH: 8
211 <212> TYPE: PRT
212 <213> ORGANISM: Histoplasma capsulatum
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RAW SEQUENCE LISTING
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214 <400> SEQUENCE: 3
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221 <211> LENGTH: 15
222 <212> TYPE: PRT
223 <213> ORGANISM: Histoplasma capsulatum
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229 <210> SEQ ID NO: 5
230 <211> LENGTH: 9
231 <212> TYPE: PRT
232 <213> ORGANISM: Histoplasma capsulatum
234 <400> SEQUENCE: 5
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236 1   5
238 <210> SEQ ID NO: 6
239 <211> LENGTH: 16
240 <212> TYPE: PRT
241 <213> ORGANISM: Histoplasma capsulatum
243 <400> SEQUENCE: 6
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245 1   5   10   15
247 <210> SEQ ID NO: 7
248 <211> LENGTH: 6
249 <212> TYPE: PRT
250 <213> ORGANISM: Histoplasma capsulatum
252 <400> SEQUENCE: 7
253 Ser Gly Arg Tyr Pro Glu
254 1   5
257 <210> SEQ ID NO: 8
258 <211> LENGTH: 10
259 <212> TYPE: PRT
260 <213> ORGANISM: Histoplasma capsulatum
262 <400> SEQUENCE: 8
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264 1   5   10
266 <210> SEQ ID NO: 9
267 <211> LENGTH: 14
268 <212> TYPE: PRT
269 <213> ORGANISM: Artificial Sequence
271 <220> FEATURE:
272 <223> OTHER INFORMATION: Description of Artificial Sequence; M antigen-specific
oligonucleotide
274 <400> SEQUENCE: 9
275 Ile Ile Pro Glu Glu Leu Val Pro Phe Thr Pro Ile Gly Lys
276 1   5   10
277 <210> SEQ ID NO: 10
278 <211> LENGTH: 15

RAW SEQUENCE LISTING ERROR SUMMARY   DATE: 06/03/2003

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Input Set : A:\150190_1.doc

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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; N Pos. 3258

Seq#:11; N Pos. 3,9

VERIFICATION SUMMARY
PATENT APPLICATION: **US/09/674,195C**   DATE: 06/03/2003
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Input Set : **A:\150190_1.doc**
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L:96 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:3240
L:328 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:0